

In the Claims:

1. (Currently Amended) A method of processing a data signal, the method comprising:
receiving a data sequence incorporating PSK symbols,
separating the data sequence into bits of symbols,
assigning a confidence value to each bit in a symbol, and
effecting convolutional decoding of the bit stream associated with the assigned
confidence values.
2. (Original) A method according to claim 1 wherein the step of assigning a confidence
value comprises mapping symbols to binary bits by means of a Gray code.
3. (Currently Amended) A method according to claim 1,
further comprising incorporating data ~~on the mapping determination from the step~~
of assigning in a look-up table for reference.
4. (Previously presented) A method according to claim 1 comprising re-coding hard
decisions as an (I,Q) pair and taking soft decisions therefrom.
5. (Currently Amended) A method according to claim 1 comprising demodulation by
decision feedback ~~equalisation~~ equalization with whitening matched filtering.
6. (Currently Amended) A method according to claim 1 comprising using a digital
processor (22) for ~~equalisation~~ equalization.
7. (Currently Amended) A method according to claim 1 using dedicated signal
processing hardware (22) for ~~equalisation~~ equalization.
8. (Previously presented) A method according to claim 1 comprising de-interleaving,
de-puncturing and incremental redundancy steps before convolutional decoding.

9. (Currently Amended) A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for ~~performing the steps of claim 1~~ processing a data signal when said product is run a computer by carrying out the steps of:

receiving a data sequence incorporating PSK symbols,
separating the data sequence into bits of symbols,
assigning a confidence value to each bit in a symbol, and
effecting convolutional decoding of the bit stream associated with the assigned confidence values.

10. (Currently Amended) Apparatus An apparatus for processing a data signal, the apparatus comprising:

means to receive (10) a data sequence incorporating PSK symbols,
mapping means (28) to map the data sequence into bits of symbols and to assign a confidence value to each bit in the symbols, and
means (33) to effect convolutional decoding of the bit stream associated with the assigned confidence values.

11. (Original) Apparatus according to claim 10 wherein the mapping means (28) is adapted to map symbols to binary bits by a Gray code.

12. (Currently Amended) Apparatus An apparatus according to claim 10, further comprising a look-up table incorporating data ~~on~~ from the mapping determination for reference means.

13. (Previously presented) Apparatus according to claim 10 comprising means to re-code hard decisions as an (I,Q) pair and means to take soft decisions therefrom.

14. (Currently Amended) Apparatus according to claim 10 comprising demodulation by decision feedback ~~equalisation~~ equalization with whitening matched filtering.

15. (Currently Amended) Apparatus according to claim 10 comprising a digital processor (22) for ~~equalisation~~ equalization.
16. (Currently Amended) Apparatus according to claim 10 comprising dedicated signal processing hardware (22) for ~~equalisation~~ equalization.
17. (Currently Amended) Apparatus according to claim 10 comprising means (30,31,32) to de-interleave, depuncture, and effect incremental redundancy before convolutional decoding.
18. (Cancelled)
19. (New) A look-up table produced by:
 - separating a received data sequence incorporating PSK symbols into bits of symbols;
 - for each bit in a symbol, assigning a confidence value to the bit based upon the position of the bit in its symbol; and
 - storing data indicating the assigned confidence value in a lookup table for use in effecting convolutional decoding of a bit stream.
20. (New) The method of claim 1, wherein the step of assigning a confidence value to each bit in a symbol includes assigning a confidence value based upon the position of the bit in its symbol.
21. (New) The apparatus of claim 10, wherein the mapping means assigns a confidence value to each bit in the symbols by assigning a confidence value based upon the position of the bit in its symbol.